1. A switch comprising:

a first and a second conductor; and

a transducer including a base and an actuator coupled to said base, said actuator including an actuating surface and a coil located thereon such that when said switch is located in a magnetic field and a sufficient current is passed through said coil, said actuator is displaced relative to said base to an actuating position wherein said actuating surface causes said first and second conductors to be electrically coupled.

2. The switch of claim 1 wherein said actuating surface is a conductive surface.

3. The switch of claim 1 wherein said actuating surface and said coil are located on opposite sides of said actuator.

4. The switch of claim 3 wherein said coil is located on an upper surface of said actuator and said actuating surface is located on a lower surface of said actuator.

5. The switch of claim 1 wherein said transducer includes a plurality of flexible arms extending between said base and said actuator to enable said actuator to be displaced relative to said base.

6. The switch of claim 5 wherein said actuator includes a ring portion having a central opening, and wherein said coil is located on said ring portion.

7. The switch of claim 6 wherein each arm extends generally circumferentially relative to said ring portion.

8. The switch of claim 6 wherein said actuator includes a cross bar extending across said central opening, and wherein said actuating surface is located on a lower surface of said cross bar.

9. The switch of claim 1 wherein said actuator is an electrical insulator.

10. The switch of claim 1 wherein said base and said actuator are each made from a wafer of material.

11. The switch of claim 1 further comprising a permanent magnet mounted onto said transducer.

12. The switch of claim 1 further comprising a top cap located on said transducer to seal an upper surface of said transducer.

13. The switch of claim 12 wherein said top cap includes an upwardly protruding portion and wherein the switch further includes a magnet located on said top cap, said magnet having an opening receiving said upwardly protruding portion therethrough to locate said magnet at a predetermined position on said top cap.

14. The switch of claim 1 wherein said actuator includes an opening to enable fluid to flow through said opening during movement of said actuator.

15. The switch of claim 1 further including a magnetic field source and wherein said first and second conductors and said actuator are located inside a magnetic field generated by said magnetic field source.

16. The switch of claim 1 wherein said first and second conductors include a gap therebetween, and wherein said actuating surface is conductive surface and wherein said actuating surface simultaneously contacts both of said first and said second conductors to electrically couple said first and second conductors when said actuating surface is in said actuating position.

17. The switch of claim 1 wherein said first and second conductors include a gap therebetween and wherein said actuating surface contacts said first conductor and causes said first conductor to contact said second conductor when said actuating surface is in said actuating position.

18. The switch of claim 1 wherein said first and second conductors are located on a circuit wafer and said transducer is located on a transducer wafer, and wherein said circuit wafer is coupled to said transducer wafer.

19. The switch of claim 18 further comprising a seal ring located between said transducer wafer and said circuit wafer.

20. The switch of claim 1 wherein said first and second conductors each include a bonding pad, and wherein said coil includes a pair of bonding pads at each end of said coil, said bonding pads providing surfaces to enable said switch to be connected to external devices.

21. The switch of claim 1 wherein said coil includes at least two stacked layers of conductive material formed in a coil, said stacked layers being separated by an insulating layer.

22. The switch of claim 1 wherein said actuating surface is rotated relative to said first and second conductor when said actuator is displaced.

23. The switch of claim 1 wherein a current can be passed through said coil to displace said actuator away from said first and second conductors.

24. A switch comprising:

a first and a second conductor having a gap therebetween; and

a transducer including a base an actuator coupled to said base, said actuator including an actuating surface located on a first surface of said actuator, said actuator being displaceable relative to said base to an actuating position wherein said actuator can electrically couple a first and a second conductor, said actuator including a coil located on an opposite side of said actuator relative to said actuating surface.

25. The switch of claim 24 wherein said actuating surface is a conductive surface.

26. A micro-switch comprising:

a first and a second conductor;

a transducer including a base and an actuator coupled to said base, said actuator including an upper surface having a coil located thereon and a lower surface having an actuating surface located thereon, said transducer including a central opening and plurality of flexible generally circumferentially-extending arms extending between said base and said actuator to enable said actuator to be displaced relative to said base, said transducer further including a top cap located on said transducer to seal said transducer; and

a magnet located on said top cap, wherein when a sufficient current is passed through said coil, said actuator is displaced relative to said base due to the interaction of the magnetic field generated by said coil and said magnet to an actuating position wherein said actuating surface contacts at least one of said first and second conductors to cause said first and second conductors to be electrically coupled.

27. A method for controlling the flow of current through a circuit comprising the steps of:

providing a circuit including a first and a second conductor;

providing a transducer having a base and an actuator coupled to said base, said actuator including a coil and an actuating surface;

locating said transducer in a magnetic field; and

selectively passing a current through said coil such that said actuator is displaced relative to said base to an actuating position wherein said actuating surface causes said first and second conductors to be electrically coupled.

28. The method of claim 27 wherein said locating step includes locating a permanent magnet adjacent to said transducer.

29. The method of claim 27 wherein said transducer includes a first internal conductor and a second internal conductor, and wherein the method further includes the step of coupling said first conductor to said first internal conductor and coupling said second conductor to said second internal conductor, and wherein said actuating surface causes said first and second internal conductors to be electrically coupled during said passing step.

30. A method for manufacturing a transducer comprising the steps of:

providing a transducer wafer of material;

locating a first layer of conductive material on said wafer;

patterning said first layer of conductive material to form a coil; and

etching said transducer wafer to form a base and an actuator, said actuator including said coil thereon and being movable relative to said base.

31. The method of claim 30 further comprising the step of locating a substrate layer

on said transducer wafer after said providing step, and wherein the method further includes the step of etching said substrate layer and said transducer wafer to form a set of arms in said substrate layer, each arm extending from said base to said actuator.

32. The method of claim 30 further comprising the step of locating a substrate layer on a top surface said transducer wafer after said providing step, and wherein said etching step includes etching the back side of said transducer wafer to expose said substrate layer such that said substrate layer couples said base and said actuator.

33. The method of claim 32 further comprising the step of etching said substrate layer to define a set of arms that extend between said base and said actuator before said wafer etching step.

34. The method of claim 33 wherein said transducer wafer is silicon and said substrate layer is polysilicon.

35. The method of claim 33 wherein said transducer wafer is a silicon-on-insulator wafer.

36. The method of claim 30 further comprising the steps of, after said patterning step:

depositing an isolation layer over said coil;

patterning said isolation layer to form an opening in said isolation layer that is located over said coil;

depositing a second conductive layer over said transducer wafer and said isolation layer such that at least part of said second conductive layer extends through said opening and contacts said coil; and

patterning said second conductive layer to form a second layer of said coil.

37. The method of claim 36 further comprising the steps of locating a third layer of conductive material on a lower surface of said transducer wafer and patterning said third layer of conductive material, and wherein said actuator include at least part of said third layer of conductive material thereon.

38. The method of claim 37 wherein said coil and said third layer of conductive material are located on an opposite side of said actuator.

39. The method of claim 30 further including the step of providing an circuit wafer having a first and a second conductor thereon, said first and second conductors including a gap therebetween, the method including the step of coupling said transducer wafer to said circuit wafer such that said actuator is located above said gap.

40. The method of claim 39 further including the step of locating a seal ring between said circuit wafer and said transducer wafer.

41. The method of claim 30 further comprising the step of locating a top cap on said transducer wafer to seal an upper surface of said transducer wafer.

42. The method of claim 41 wherein said top cap includes a upwardly-extending protrusion, and wherein the method includes the step of locating a ring magnet over said top cap such that said upwardly-extending protrusion is received in a central opening of said ring magnet.